REMARKS/ARGUMENTS

In response to the Examiner's further Office Action of November 7, 2006 the Applicant respectfully submits the accompanying Amendment to the claims and the below Remarks.

Regarding Amendment

In the Amendment:

claims 8, 11, 27 and 30 are amended to replace each of the recitations of "a said" with --said--;

claims 12 and 31 are amended to replace "each element" with --each heater element--;

claims 15, 34 and 51 are amended to replace "nozzle chambers" with –bubble forming chambers-- and to consistently recite "bubble forming chambers"; and

claims 1-6, 10, 11, 13, 14, 16-22, 24, 25, 29, 32, 33, 35-44, 46-50 and 52-54 are unchanged.

It is respectfully submitted that the above amendments do not add new matter to the present application.

Regarding Claim Objections

It is respectfully submitted that the above-discussed amendments to claims 8, 11, 12, 15, 27, 31, 34 and 51, provide the corrections required by the Examiner.

Regarding 35 USC 103(a) Rejections

It is respectfully submitted that the subject matter of independent claims 1, 19 and 38, and claims 2-6, 8, 10-18, 20-22, 24, 25, 27, 29-37, 39-44 and 46-54 dependent therefrom, is not taught or suggested by any one or more of previously cited Campbell, De Moor, Silverbrook and Anagnostopoulos in view of newly cited Lebens et al. (US 6,631,979), for at least the following reasons.

The Examiner combines Campbell, De Moor and Lebens to provide heater elements as cantilever beams in the combined print head of Campbell and De Moor. It is respectfully submitted that one of ordinary skill in the art would not combine Campbell, De Moor and Lebens in this way, because the disclosed operation of Campbell may be negatively effected.

That is, Campbell clearly discloses carefully designing the geometry of the heater elements 12 so as to maximize the efficiency of bubble nucleation whilst minimizing cavitation effects. This is done by configuring the heater elements and print cavity 21 so that a specific pillow-shaped bubble 22 is generated to eject a drop in an energy-efficient manner and so that the bubble collapses in a specific manner so as not to damage the heater elements (see col. 3, lines 50-66 of Campbell).

On the other hand, Lebens discloses configuring the thermal actuator 15 to be moved relative to the nozzle 30 of the liquid chamber cover 28 to cause ejection of ink (see col. 5, line 20-col. 6, line 37 of Lebens).

Thus, in order to incorporate the disclosed arrangement of Lebens into the disclosed arrangement of Campbell (and De Moor), the heater element of Campbell would be

positioned in or on the thermal actuator of Lebens. However, in such an arrangement the thermal actuator would be operated to move within the print cavity of Campbell, based on the disclosed operation of Lebens, such that the carefully designed bubble nucleation of Campbell may be effected in such a way as to not optimize the efficiency and may result in undesired cavitation effects due to the bubble collapse being effected by the movement of the thermal actuator. This clearly would destroy to disclosed operability of Campbell.

Furthermore, Campbell clearly discloses that the heater element causes ink ejection through heating of the ink, whilst Lebens clearly discloses that the thermal actuator causes ink ejection through its movement. Therefore, there is no motivation for one of ordinary skill in the art to combine these very different mechanisms into a single element for ink ejection.

Further still, none of the other references in De Moor, Silverbrook and Anagnostopoulos provide any teaching or suggestion that makes up for the above deficiencies in Campbell and Lebens.

It is respectfully submitted that all of the Examiner's objections and rejections have been traversed. Accordingly, it is submitted that the present application is in condition for allowance and reconsideration of the present application is respectfully requested.

Very respectfully,

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